1. (Currently Amended) A descaling nozzle for removing scale from a steel plate surface by discharging water from a nozzle, wherein the nozzle has a nozzle orifice comprising:

a discharge orifice opening at a concave surface or concave area of a front end, wherein the discharge orifice opening has a minor diameter D_1;

a tapered segment extending towards the upstream side from said discharge orifice with a taper angle θ of 30 to 80°; and

a large-diameter segment continuing with said tapered segment, said large-diameter segment having an inner diameter D_1; and

the ratio (D_1/D_2) of the inner diameter D_1 of the large-diameter segment relative to the minor diameter D_2 of said discharge orifice is not less than 3.

2. (Currently Amended) A descaling nozzle for removing scale from a steel plate surface by discharging water from a nozzle, wherein the nozzle is provided with a nozzle orifice comprising a discharge orifice opening at a concave surface or concave area of a front end, a tapered segment extending from said discharge orifice, and a large-diameter segment continuing with said tapered segment, wherein athe ratio (D_1/D_2) of ~~the inner~~ an inner diameter D_1 of the large-diameter segment relative to ~~the minor~~ a minor diameter D_2 of said discharge orifice is not less than 3 and less than 7.

3. (Original) A descaling nozzle according to Claim 2, wherein the taper angle θ of the tapered segment is 30 to 80°.

4. (Currently Amended) A descaling nozzle according to Claim 1, wherein the discharge orifice has an elliptical shape and the large-diameter segment defines a cylindrical passage, and the ratio (D_1/D_2) of the inner diameter D_1 of the large-diameter segment relative to the minor diameter D_2 of said discharge orifice is 3 to 6.

5. (Original) A descaling nozzle according to Claim 1, which removes scale from a steel plate surface by discharging water from the nozzle at a pressure of 5 to 30 MPa and a discharge flow rate of 40 to 200 //minute, wherein the taper angle θ of the conical tapered segment is 40 to 70° and the ratio (D_1/D_2) of the inner diameter D_1 of the large-diameter segment relative to the minor diameter D_2 of said discharge orifice is 4 to 6.

6. (Previously Presented) A descaling nozzle according to Claim 1, wherein the discharge flow from the nozzle spreads in a single direction (width direction) within a plane perpendicular to the central axis of the nozzle, and the nozzle has an erosion thickness angle of 1.5 to 3° in the direction (thickness direction) perpendicular to this width direction.

7. (Previously Presented) A descaling nozzle according to Claim 1, wherein the flow path

of the nozzle comprises the discharge orifice opening in an elliptical configuration at the concave surface or concave area at the front end, the tapered flow path extending towards the upstream side from the discharge orifice with spreading at a taper angle θ of 40 to 60°, and the cylindrical flow path extending from the upstream end of the tapered flow path with the inner diameter being substantially the same.

8. (Original) A descaling nozzle according to Claim 7, wherein in the elliptical discharge orifice, the ratio of the major diameter relative to the minor diameter is 1.2 to 2.5, and the ratio (D_1/D_2) of the inner diameter D_1 of the conical flow path relative to the minor diameter D_2 of the discharge orifice is 4 to 6.

9. (Previously Presented) A descaling nozzle according to Claim 1, which has a nozzle tip fitted to a front end, wherein the nozzle tip comprises a concave surface or concave area formed at a front end, a discharge orifice opening at the concave surface or concave area, and a conical flow path spreading at a predetermined taper angle θ towards the upstream side from the discharge orifice, and the concave surface or concave area comprises an inclined side wall which inclines inwardly in the radial direction towards the upstream side from the front end.

10. (Previously Presented) A carbide nozzle tip attachable to a front end of a nozzle recited in Claim 1, which is formed out of cemented carbide, wherein the ratio (D_1/D_2) of the inner

diameter D_1 of the upstream end relative to the minor diameter D_2 of a discharge orifice of the tip is not less than 3.

11. (Original) A carbide nozzle tip according to Claim 10, which comprises a discharge orifice opening at a concave surface or concave area formed at a front end, and a conical flow path extending with a predetermined taper angle θ towards the upstream direction from the discharge orifice.

12. (Previously Presented) A descaling nozzle according to Claim 2, wherein the discharge orifice has an elliptical shape and the ratio (D_1/D_2) of the inner diameter D_1 of the large-diameter segment relative to the minor diameter D_2 of said discharge orifice is 3 to 6.

13. (Previously Presented) A descaling nozzle according to Claim 2, wherein the discharge flow from the nozzle spreads in a single direction (width direction) within a plane perpendicular to the central axis of the nozzle, and the nozzle has an erosion thickness angle of 1.5 to 3° in the direction (thickness direction) perpendicular to this width direction.

14. (Previously Presented) A descaling nozzle according to Claim 2, wherein the flow path of the nozzle comprises the discharge orifice opening in an elliptical configuration at the concave surface or concave area at the front end, the tapered flow path extending towards

the upstream side from the discharge orifice with spreading at a taper angle θ of 40 to 60°, and the cylindrical flow path extending from the upstream end of the tapered flow path with the inner diameter being substantially the same.

15. (Previously Presented) A descaling nozzle according to Claim 2, which has a nozzle tip fitted to a front end, wherein the nozzle tip comprises a concave surface or concave area formed at a front end, a discharge orifice opening at the concave surface or concave area, and a conical flow path spreading at a predetermined taper angle θ towards the upstream side from the discharge orifice, and the concave surface or concave area comprises an inclined side wall which inclines inwardly in the radial direction towards the upstream side from the front end.

16. (Previously Presented) A carbide nozzle tip attachable to a front end of a nozzle recited in Claim 2, which is formed out of cemented carbide, wherein the ratio (D_1/D_2) of the inner diameter D_1 of the upstream end relative to the minor diameter D_2 of a discharge orifice of the tip is not less than 3.